Product Datasheet

AZD-1390

Catalog No. **BP-01968** · CAS **2089288-03-7** · Form **free base** · Physical state **solid** · Color **White to off-white** · Version **1.0** · Revision **2026-09-09**

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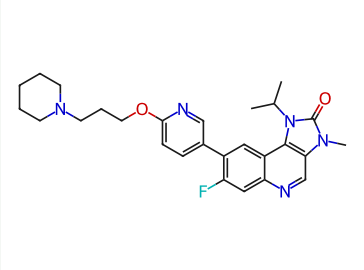
Target	Research area
ATM/ATR; Apoptosis; Checkpoint Kinase (Chk)	**Cancer**

Molecular formula	$C_{27}H_{32}FN_5O_2$
Molecular weight	**477.5737**

STRUCTURE



DESCRIPTION

AZD1390 is a potent and selective inhibitor of ATM in cells (IC50 = 0.78 nM) with the ability to cross the blood-brain barrier. AZD1390 has >10,000-fold selectivity over closely related members of the PIKK family of enzymes and excellent selectivity across a broad panel of kinases. AZD1390 displays excellent oral bioavailability in preclinical species (66% in rat and 74% in dog), is not a substrate for human efflux transporters, and has been shown to efficiently cross the BBB in non-human primate PET studies.

BIOLOGICAL ACTIVITY

In vitro

ATM autophosphorylation inhibition by AZD1390 occurred at 4 hours after treatment, and 3 nM produced strong inhibition of ATM in LN18 GBM cells. Other DDR inhibitors tested under the same conditions at relevant IC50 concentrations did not affect pATM levels. A dose-dependent increase in G2 accumulation occurred after 24 hours following AZD1390 and irradiation at 2 Gy indicative of cells not arresting in S and accumulating in G2 or experiencing problems during mitosis.

In vivo

In in vivo syngeneic and patient-derived glioma as well as orthotopic lung-brain metastatic models, AZD1390 dosed in combination with daily fractions of IR (whole-brain or stereotactic radiotherapy) significantly induced tumor regressions and increased animal survival compared to IR treatment alone.

SOLUBILITY

Soluble in DMSO

REFERENCES

[1]. Durant ST, et al. The brain-penetrant clinical ATM inhibitor AZD1390 radiosensitizes and improves survival of preclinical brain tumor models. Science advances. 2018 Jun;4(6):eaat1719.

[2]. Jucaite A, et al. Brain exposure of the ATM inhibitor AZD1390 in humans-a positron emission tomography study. Neuro-oncology. 2021 Apr 12;23(4):687-696.

[3]. Özdemir D, et al. AZD1390, an Ataxia telangiectasia mutated inhibitor, enhances cisplatin mediated apoptosis in breast cancer cells. Experimental cell research. 2025 Jan 15;444(2):114382.

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